MN 2 3

10 December 1956

MEMORANDUM FOR: THE RECORD

SUBJECT: Visit to [redacted] 25X1

1. Time and Place of Meeting: The meeting was held in [redacted] on 3 December 1956. 25X1

2. Attendance: [redacted] 25X1

25X1

3. Purpose of Meeting: Discuss the progress on P-109B, Contact Microphone, at [redacted] 25X1

4. Discussion:

a. In answer to the Sponsor's request, [redacted] tested an Altec Lansing Condenser microphone. [redacted] stated that the microphone was very poor on the highs, but that it picked the lows nicely. However, a good share of the lows are noise and detract from the intelligibility. [redacted] stated that the Altec Lansing is a displacement type microphone instead of an accelerometer microphone and that as such it could only pick up the displacement of a wall as a whole. [redacted] felt that the Brush BL 301 and the Shure 61B were far superior to the Altec Lansing microphone. 25X1 25X1 25X1 25X1

[redacted] now feels that they have determined the optimum frequency response and sensitivity that a pickup, designed to meet our requirements, should have. They feel that the Brush BL 301 and the Shure 61B are sensitive enough and have the proper frequency response. They have a response of at least one volt/g to 3700 cps. Between the two microphones, [redacted] favors the Shure 61B. [redacted] stated that they believed that both microphones are within 5 db sensitivity of what an ideal, practical microphone should be and that though both microphones could be raised 5 db, the effort required to do so would not be worth the results. 25X1 25X1

[redacted] restated their earlier comment that although the [redacted] microphones were very sensitive, their response above 1000 cps was very poor. They attributed the drop in the higher frequencies to the loading effect. [redacted] took some of the [redacted] unloaded crystals and by loading them in a different method and amount, obtained results comparable to the Shure 61B. 25X1 25X1 25X1

[redacted] was asked 25X1

[redacted] was asked if they had tried boosting the highs and they stated they had not. The microphone proposed by [redacted] has a high resonance peak at around 2000 cps. [redacted] feels that if necessary they can flatten this peak out somewhat. They felt that boosting the highs would not improve the take because of the hollow ringing effect caused by the peak. It was their belief that boosting would add to this effect. [redacted] was instructed to try it anyway and to indicate what results were obtained.

[redacted] conducted some tests at the [redacted] on an eight-inch hollow tile wall. The Shure 61B and the Brush BL301 microphones were used. A word test was tape recorded and played at 50 db sound pressure level as the noise source. The take from the microphone was recorded and then played back to a group of testers. The testers marked down the word or words as they understood them. The results indicated 60-90% correct on playback. When the sound pressure level was changed to 60 db, the percentage improvement was very small. The undersigned listened to this tape and in comparison to the tapes [redacted] made, this one was outstanding. However, it should be noted that the wall under test was, as [redacted] puts it, a very quiet one.

[redacted] feels that the results they have obtained so far indicate that speech can be picked up on quiet walls. The next step will be to work on walls that have normal wall noise in them. [redacted] will now start comparing monsural results with binaural setup to see if the take will be improved by the use of two microphones. [redacted] was instructed to make some more tests using the monaural setup and to cut some more tapes for the sponsor's use. A cross-section of different type walls will be used.

[redacted] has received some barium titanate transducers three-inches in diameter for use on the sonic program and will conduct some tests on them to see how they will act when used on walls. [redacted] stated that they could build a larger crystal pickup which would not have the resonance peak that the present ones have, but that it would involve considerable more time and cost per pickup.

b. Sonic Wall Measurement Program. [redacted] gave the undersigned their proposal for the ultrasonic wall thickness measurement program. At the present time, they are going ahead with the program per instructions from TSS/CD and until the present proposal is accepted, the charges will be placed against the TSS/CD contract.

[redacted] stated that they needed two 6130 tubes urgently and that when they attempted to purchase them, they were confronted with a priority restriction. The tubes are used in pulsed radar sets and have a deionization time of 0.6 microsecond. [redacted] requested that the sponsor secure the tubes for them if at all possible. The next step by [redacted] will be the initiation of the task when the contract is received.

[redacted]
TSS/APD

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